

**EPA Superfund
Record of Decision:**

**LEMBERGER TRANSPORT & RECYCLING
EPA ID: WID056247208
OU 02
FRANKLIN TOWNSHIP, WI
09/29/1994**

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Lemberger Transport and Recycling, Inc. Site, Manitowoc County, Wisconsin.

STATEMENT OF BASIS

This decision document presents the selected remedial action for the Second Operable Unit (OU2) at the Lemberger Transport and Recycling Inc. Site, in Manitowoc County, Wisconsin, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to the extent practicable. This decision is based upon the contents of the Administrative Record for the site.

DESCRIPTION OF THE SELECTED REMEDY

U.S. Environmental Protection Agency (EPA) has selected "No Further Action."

DECLARATION STATEMENT

EPA has determined that once the provisions of the July 15, 1993 Administrative Order on Consent have been implemented, the conditions at the site will pose no current or potential threat to human health or the environment. Accordingly, no further remedial action will be undertaken at this site.

Although this is a decision for "No Further Action," the statutory requirement of CERCLA Section 121 for a five-year review will be undertaken. The five-year review will be performed because waste will be left in place at the site.

The State of Wisconsin concurs conditionally with this decision from a technical standpoint.

DATE

Valdas V. Adamkus
Regional Administrator

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LEMBERGER TRANSPORT AND RECYCLING INC.
MANITOWOC COUNTY, WISCONSIN
SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

DECISION SUMMARY

I. SITE DESCRIPTION

The Lemberger Transport and Recycling, Inc. (LTR) site consists of a former land disposal facility located in Manitowoc County, Wisconsin. The study area is bounded approximately by Haas Road to the north, San Road to the south, Madson Road to the east and Korinek Road to the west. Figure 1 shows the location of the site. The site is located near the intersection of Hempton Lake and Sunny Slope Roads. The Branch River, which drains into Lake Michigan, is located less than one mile west of the site. The river is used for fishing and canoeing and as a potable water supply. The entire Branch River system is managed as a smallmouth bass stream. The LTR site occupies approximately 45 acres, with 16 acres used for industrial landfilling. The site is unlined and it occupies an area previously used to mine gravel. Land in the vicinity of the site is rural and agricultural, with dairy farms in the area. Most residences are located along Reifs Mills Road. Four residences are located within 1,000 feet of the site. The groundwater is used by residents as a drinking water supply and for agricultural activities.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

The LTR site operated between January 1970 and September 1976 under the same license issued by the Wisconsin Department of Natural Resources (WDNR) for the Lemberger Landfill (LL) Superfund site. The site ceased operations in 1976 when the WDNR did not renew the license. The wastes were deposited in trenches excavated to an approximate depth of five feet. Records of the types and quantities of wastes were maintained, but no specific records were kept to indicate what types of wastes were deposited in each trench. No engineered liner or leachate collection systems were ever installed at the LTR site.

The LTR site is documented as receiving industrial waste and a variety of liquids, sludges, and slurries between 1969 and 1977. Industrial wastes, including wood tar distillates, aluminum dust, and oil and water mixtures were disposed at the site.

The WDNR had expressed concern that the site had not been covered properly, as indicated by wastes exposed at the landfill's surface. Subsequently, in 1982, the WDNR entered into a consent order with Lemberger Landfills Inc., which operated the LL and LTR sites, to investigate the extent of contamination at the site. WDNR also issued a notice of violation in August 1982 to Lemberger Landfills, Inc. regarding failure to implement groundwater monitoring requirements at the LTR site. In September 1984, the LTR site was added to the National Priorities List (NPL), and EPA became the lead regulatory agency.

Residential Wells

In 1985, after receiving complaints from people living northwest of the Lemberger sites, the WDNR sampled residential wells in the area. Sample test results indicated volatile organic compounds (VOCs) were present in seven residential wells near the sites and the groundwater under the sites in amounts that exceeded Wisconsin groundwater standards. Affected residents received replacement wells, which were drilled 160 to 220 feet deeper than their original wells. Later, from 1985 through 1987, the new wells were sampled and no contamination was found.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA hosted a "kick off" public meeting on March 29, 1989, at St. Patrick/Maple Grove School, Reedsville, Wisconsin. The purpose of the meeting was to inform the local residents of the Superfund process and the work to be conducted under the Remedial Investigation (RI). RI update fact sheets were issued in April 1990 and January 1991.

The RI Report for the first operable unit at the Lemberger sites was released to the public for review in January 1991. The Feasibility Study (FS) and Proposed Plan were released on May 20, 1991. Information repositories have been established at the following three locations: The Manitowoc Public Library, 808 Hamilton Street, Manitowoc, Wisconsin; the Whitelaw Village Hall, 232 East Menasha Avenue, Whitelaw, Wisconsin; and the Franklin Town Chairman, Steve Brooks, Home Office, Route 1, Box 293A, Whitelaw, Wisconsin. The Administrative Record for the sites has been made available to the public at the EPA Docket Room in Region V and at the Manitowoc Public Library.

A public meeting was held on May 22, 1991 at the Franklin Town Hall, Cato, Wisconsin to discuss the FS and the Proposed Plan for the first operable unit. The meeting was chaired by representatives from the EPA, WDNR, the Wisconsin Department of Health and attended by approximately 60 residents.

A public meeting was held on November 5, 1992 to update the community on the investigation and cleanup activities at the LTR site. More than 50 people attended. A fact sheet was also distributed.

The FS and Proposed Plan for the first operable unit were available for public comment from May 20, through July 29, 1991. The Record of Decision (ROD) for the first operable unit at the Lemberger sites was signed on September 23, 1991.

A site tour for local media and officials was held in December 1993 when the LTR drum removal began. Update letters were also sent to everyone on the site mailing list in January 1992, April 1993, and November 1993.

The Proposed Plan for the second operable unit was available for public comment from July 18, through August 17, 1994. A public meeting to discuss the Proposed Plan was held on August 3, 1994 at the Franklin Town Hall in Cato, Wisconsin.

Display advertisements were placed in the Manitowoc Herald Times to announce all public meetings and comment periods as well as the availability of the administrative record. Press releases were also sent to other local newspapers, television, and radio stations.

The public participation requirements of CERCLA sections 113 (k)(2)(i-v) and 117 of CERCLA have been met in the remedy selection process. This decision document presents the selected remedial action for the Lemberger sites in Wisconsin, chosen in accordance with CERCLA, as amended by SARA and, to the extent practicable, the National Contingency Plan (NCP). The decision for this site is based on the administrative record.

IV. SCOPE AND ROLE OF OPERABLE UNIT

As with many Superfund sites, the conditions at the LL and LTR sites were complex. As a result, EPA organized the work into two planned activities. The remedial action selected in the September 1991 ROD addressed the first of these two planned activities or operable units at the sites. The September 1991 ROD addressed groundwater contamination at the LL and LTR sites, and source contamination at the LL site. This response action was scoped to treat the groundwater in the shallow and deep aquifers and install a slurry wall around the waste in the LL site and place a cap on the LL site. The remedy utilized permanent solutions and alternative treatment or resource recovery technology to the maximum extent practicable for each site, and satisfied the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

The second and final action which is the scope of this ROD addresses the source of contamination at the LTR site. The LTR landfill contains hot spots which needed to be further characterized. The October 1992 RI for OU2 found buried drummed wastes and further delineated and identified hot spots present at the site. As a result, EPA determined that the conditions at the site warranted the undertaking of emergency removal activities to abate conditions which may have presented an imminent and substantial endangerment to the public. As part of these activities, EPA entered into an Administrative Order on Consent (AOC) on July 15, 1993 with a group of Potentially Responsible Parties (PRPs) to implement the removal action components at the site. The AOC requires the PRPs to fence the landfill, excavate and remove buried drums, install a soil vapor extraction system, and cap the landfill.

As a result of these response actions, EPA has determined that no further action is required at this site. However, because hazardous substances will remain at the site, a five-year review will be conducted to assure human health and the environment continue to be protected by the response activities conducted at the site as part of the July 15, 1993 AOC.

V. SITE CHARACTERISTICS

The RIs involved sampling and analysis of groundwater, air, surface water, sediment, leachate, subsurface soil, and surface soil to determine site conditions. Water samples were collected from numerous residential and monitoring wells around the site. A geophysical investigation consisting of a magnetic survey, an electromagnetic survey and a seismic survey was conducted. Site geology, landfill characteristics, and groundwater flow patterns were also examined.

Based on the results of the RIs, EPA determined that the threats to human health and the environment are through exposure by ingestion or direct contact with VOCs, semi-volatile organic compounds (SVOCs), and inorganic compounds found in the groundwater near the site and in landfill contents on the site. The following conditions were observed at the site:

1. Topography

The Branch River, which drains into Lake Michigan, is less than one mile west and northwest of the site. The area consists of rolling to hilly terrain and numerous wetlands. The area is generally characterized by glacial deposits and variable bedrock. The LTR site slopes to the west/northwest with steeper slopes in the east. Elevations on the LTR site range from 870 feet to 852 feet above Mean Sea Level (MSL). There are four general geologic units present at the study area, the upper granular unit (UGU), the cohesive unit (CU), the lower granular unit (LGU) and the bedrock. The UGU is composed of sandy, gravelly deposits at or close to the ground surface. It does not cover the whole study area. The CU, or clay layer, is composed of silty, clayey deposits and has low hydraulic conductivity. The LGU is composed of sandy, gravelly deposits underlying the clay layer and rests on the bedrock.

2. Hydrogeology

There are two groundwater systems at the site. Within the upper granular unit is a localized perched aquifer. The clay layer separates it from the lower aquifer in the lower granular unit and bedrock. A groundwater divide as a result of a bedrock ridge runs northeast-southwest on the southeast side of the study area. The water flows away from the divide in all directions but primarily to the northwest and the southeast.

- a. The upper aquifer is within the upper granular unit and is localized in the area of the LL site, apparently extending east into Ridgeview Landfill, south into the LTR site, and north at least as far as monitoring well RM-4. The upper aquifer may be a single perched system or there may be more than one independent perched water table system in the area. Groundwater in the upper aquifer appears to flow to the west through the waste disposed at the LL site. The average depth of the upper aquifer is thirteen feet.

- b. The cohesive or clay layer, underlies the upper aquifer and is interbedded with granular material at the interface. The thickness of the clay layer varies considerably across the study area, ranging from one to three feet thick over the bedrock ridge to almost 50 feet thick at several locations where the bedrock surface is lower in the north, northwest, and west portions of the Lemberger sites study area.
- c. The lower aquifer is vertically and laterally continuous west of the LTR site. It is composed of well-graded, dense sandy gravel and gravely sand and is hydraulically connected with the underlying bedrock. The thickness and depth of the aquifer increases away from the bedrock ridge, ranging from one to three feet thick at the bedrock ridge to 25 feet thick northwest of the Lemberger sites between monitoring wells RM-4 and RM-2.
- d. The bedrock, under the consolidated deposits is a dolomitic limestone that ranges from a highly weathered condition in its upper surface to a highly fractured and then unfractured bedrock below. The lower water system is in the limestone bedrock and has a regional direction of groundwater flow to the east, toward Lake Michigan. Locally, however, the groundwater flows to the northwest, toward the Branch River. An area of local recharge of the lower aquifer runs northeast-southwest on the southeast side of the Lemberger sites study area. The recharge area functions as a groundwater divide, with flow moving away from the divide in all directions but primarily to the northwest or the southeast.

3. Contamination

a. Source

The source of contamination from the LTR site is the landfilled waste. The source of contamination at the LTR site is contributing to groundwater contamination. Based on information derived from the RIs performed at the LTR site, available aerial photographs, the Final Public Comment FS report for the first operable unit for the LL and LTR sites, and past disposal practices, the soil and waste contamination at the LTR site is delineated as follows:

- Hot Spots - Areas that contain buried drums, concentrated amounts of hazardous constituents, and high contaminant concentrations.
- Area of Low to Moderate Contamination - All locations where hazardous constituents were detected at low to moderate concentrations based on the OU2 LTR RI analytical results.
- Area of Low/Probable Contamination - The area where hazardous constituents were detected (regardless of concentration) and all locations with high probability of having been used for disposal of waste materials in the past.

The probable area of soil contamination, as shown on Figure 2, is estimated to cover an area of approximately 1.2 million square feet (approximately twenty seven acres).

b. Groundwater

The presence of hazardous constituents in the landfill is indicated by the chemical composition of the groundwater. VOCs and SVOCs, and inorganic compounds were detected in the groundwater including 1-1 dichloroethane, trichloroethelene, 1,2 dichloroethene, acetone, toluene, ethylbenzene, xylene, 4-methyl-2-pentanone, chloroethane, 1-1-trichloroethane barium, chromium, methylene chloride, 2-butanone and cadmium. Contamination above Maximum Contaminant Levels (MCL) was found at a depth of 95.4 feet.

The upper aquifer contained high concentrations (3,000 to 5,000 ug/L) of acetone and 2-butanone, and high concentrations (41,800 to 1.3 million ug/L) of calcium, iron, magnesium, potassium and sodium. Moderate concentrations (100 to 220 ug/L) of methylene chloride, 1,2-dichloroethene, and tetrachloroethene were detected. Three semivolatile phenols were

also identified.

Extensive VOCs (greater than 1,000 ug/L) were found in the lower aquifer including chloroethane, methylene chloride, 1,1-dichloroethane, 1,2-dichloroethene, and 1,1,1-trichloroethane. Phenols, phthalates, pesticides and Polychlorinated Biphenyls (PCBs) were also detected in the lower aquifer. Concentrations begin to decrease north of the LTR Site and toward the Branch River. The September 23, 1991 Record Of Decision selected groundwater pump and treat to actively restore the aquifer to Federal and State of Wisconsin groundwater quality standards as one of the components of the remedial action for the first operable unit at the LTR site.

c. Soils

At the LTR site, surface soils contain VOCs at concentrations ranging from 230 to 2,000 ug/kg, SVOCs ranging from 94 to 2,000 ug/kg and pesticides including Aldrin at concentrations of 240 ug/kg and Dieldrin at concentrations of 200 ug/kg. Subsurface soils at the LTR site had lower concentrations of VOCs than the surface soils, ranging from 3 to 620 ug/kg. SVOCs, pesticides, and PCBs were not found in the LTR subsurface soils. The risks from the soils from the LTR site were further assessed in the OU2 RI.

d. Sediment, Surface Water and Leachate

Sediment and surface water samples were collected at and near the LL and LTR Sites, including the wetland area. Sediment samples showed low concentrations of VOCs; however, one sample south of the LL site contained acetone detected at 510 ug/kg. Surface water samples contained phthalates, methylene chloride and acetone at low levels. Of the four leachate sample locations planned, leachate was found at only one location, in the northwest corner of the LL site. Organics were not detected in this sample.

VI. SUMMARY OF SITE RISKS

The RI for OU2 at the LTR site revealed potential sources of contamination at most test borings and test pit investigative locations across the site. Fill soils intermixed with solid wastes, drums containing liquid and semi-solid wastes, and natural soils were encountered at the site. A total of four drums were encountered during the OU2 RI at LTR.

Fourteen VOCs were detected in the test pits, and six VOCs were detected in the borings.

Tetrachloroethylene, acetone, methylene chloride, toluene, ethylbenzene, and xylenes (total) were detected at concentrations ranging from 1 µg/kg to 380,000 µg/kg.

Semivolatile organic compounds were most notably present in the test pit samples.

Polynuclear Aromatic Hydrocarbons (PAHs) were also encountered in most fill samples.

A red-pink liquid, clear liquid, and white semi-solid were revealed in two of the drums encountered during the OU2 RI activities at LTR. The red-pink liquid portion was sampled and the analytical data revealed high levels of VOCs and metals, a flash point of 54 degrees Fahrenheit, and a pH of 4.5.

The baseline risk assessment conducted in 1991 by EPA for OU1 RI at LTR was not quantitatively revised by the RI for OU2. Under the future residential scenario, potential risks for new contaminants of concern were qualitatively assessed. The 1991 risk assessment determined that repeated exposure over many years to the site's contaminated soil increased an individual's risk of developing cancer to one in 100,000. The risk assessment concluded that direct contact with contaminated soils at the site constitutes a health and environmental threat.

Based on the results from the analysis of the drummed wastes, it was determined that the high levels of VOCs and the low flash point of these wastes constituted an actual or threatened release and that this presented an imminent and substantial endangerment to the public health, welfare, or the environment.

On July 15, 1993, EPA signed an AOC with eleven PRPs to do removal activities at the LTR site. The AOC required the PRPs to perform a land survey to better define the boundaries of the site, construct a fence around the perimeter of the site, perform a geophysical study to delineate areas that could contain buried drums, excavate these areas and remove all drums encountered, dispose of the excavated drums and their contents, use soil vapor extraction to treat the contaminated soil adjacent to the excavated drums and "hot spot" areas identified in the RI Technical Memorandum, and provide site closure by constructing at a minimum a solid waste cover over the landfill in accordance with NR 504.07, Wis. Adm. Code.

Activities pursuant to the AOC started in August 1993. The PRPs performed a boundary survey for the site and a geophysical survey. In October 1993, a report was submitted by the PRPs presenting the results of the geophysical survey.

A work plan for the excavation and removal of drums from the LTR site was approved by EPA in November 1993. On November 22, 1993, field activities related to the excavation and removal of drums started at the LTR site. The excavation and classification of drums were completed by April 1994. During excavation activities, a total of 1,380 buried drums were excavated and put into overpacks. Additionally, 180 laboratory-type jars and 226 gas cylinders were found during excavation activities. All drums will be classified and disposed of at an EPA-approved facility.

Finally, as part of the work required by the AOC, the PRPs will submit a work plan for the design and construction of a soil vapor extraction system and at a minimum a landfill cap in accordance with NR 504.07, Wis. Adm. Code. In the event U.S. EPA, in consultation with WDNR, determines, prior to cover construction, that the soil vapor extraction system would not be effective in removing VOCs from the source, U.S. EPA will require a S. NR 504.07, Wis. Adm. Code, composite cover system to be constructed to provide for a greater reduction of infiltration through the source. As part of the implementation of the AOC, U.S. EPA in consultation with WDNR, will develop effectiveness criteria for the soil vapor extraction system. Compliance with Wisconsin Statute, Chapter 160 and NR 140, WAC, will be achieved through the implementation of the final remedy selected for groundwater as discussed in the September 1991 ROD for OU1 at the site.

The construction of a landfill cap will reduce the risk of direct contact and ingestion of waste. The infiltration of water through the waste will be reduced too. Furthermore, the removal of drums in conjunction with the construction of a soil vapor extraction system at the site will reduce the toxicity, mobility and volume of the contaminants by treating the waste. Pursuant to 40 CFR Section 300.415, the activities required by the AOC will meet Federal and State ARARs to the extent practicable. The removal of drums and the treatment of waste by using a soil vapor extraction system will reduce the risk to human health and the environment over the long term.

EPA believes that once all the activities required by the AOC are implemented, there will be no risk, therefore, no further action will be needed at the site.

VII. EXPLANATION OF SIGNIFICANT CHANGES

There are no significant changes from the recommended alternative described in the proposed plan.

VIII. STATE CONCURRENCE

The State of Wisconsin concurs conditionally with the action from a technical standpoint.

RESPONSIVENESS SUMMARY
LEMBERGER TRANSPORT AND RECYCLING SITE
SOURCE CONTROL OPERABLE UNIT
MANITOWOC, WISCONSIN

PURPOSE

This responsiveness summary has been prepared to meet the requirements of Sections 113 (k) (2) (B) (iv) and 117(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), which requires the United States Environmental Protection Agency (U.S. EPA) to respond to each of the significant comments, criticisms, and new data submitted in written or oral presentations on a proposed plan for remedial action. The responsiveness summary provides a summary of citizen's comments and concerns identified and received during the public comment period, and U.S. EPA's responses to those comments and concerns. All comments received by U.S. EPA during the public comment period will be considered in the selection of the remedial alternative for the Site. The responsiveness summary serves two purposes: It provides U.S. EPA with information about community preferences and concerns regarding the remedial alternatives, and it shows members of the community how their comments were incorporated into the decision-making process.

This document summarizes written and oral comments received during the public comment period of July 18 to August 17, 1994. The public meeting was held at 7:00 p.m. on August 3, 1994 at Franklin Town Hall, Cato, Wisconsin. Comments were submitted during the public meeting by the Wisconsin Department of Natural Resources (WDNR) and two residents. Two comments were mailed to U.S. EPA.

OVERVIEW

The proposed remedial action for the source control operable unit (OU) at the Lemberger Transport and Recycling (LTR) Site was announced to the public just prior to the beginning of the public comment period. U.S. EPA proposed "No Further Action."

State Comments

1. Comment: The WDNR believes it would be best to delay the final decision on the type of closure at the LTR Site, e.g., the type of cover or capping system to be employed, until additional information can be provided by the responsible parties and additional public input can be obtained. The Department believes that the postponement of a final decision would not cause any significant delays in the overall project schedule, and could, in fact, accelerate the overall schedule by avoiding future design problems.

Response: It is U.S. EPA's position that the information available at this time is enough to make a final decision on the type of closure for the LTR site. Two Remedial Investigations (RI) have already taken place, and the source characterization performed was very rigorous. The identification of areas of contamination and the location of drummed wastes were appropriately identified. During the RI activity for OU1 and OU2, 22 surface soil samples plus three background samples were collected, 18 soil borings were done, and 13 test pits were dug. In addition, the Administrative Order on Consent (AOC) required the Potentially Responsible Parties (PRPs) to do additional geophysical investigations and to identify and excavate all anomalies to determine if drums were buried in such areas. Approximately 1,400 drums were excavated, eliminating the possibility of drums leaking into the soils. The RI provided information on soil characteristics at the site. Based on this information, there is literature that shows a soil vapor extraction system can work adequately in these types of soils. U.S. EPA does not agree with WDNR, because delaying the final capping decision will cause delays in the project schedule.

2. Comment: If U.S. EPA must make a final decision now, then the Department would concur with option 2, a composite cover design with soil vapor extraction provided soil vapor extraction can be shown to work effectively at the site.

Response: A composite cap is not appropriate because construction of the soil vapor extraction system would impair the integrity of the composite cap. An NR 504.07 cap will provide an adequate level of protection when combined with treatment and can easily be repaired after installation of the soil vapor extraction system.

Community Comments

3. Comment: One commenter noted that maybe the actions being implemented at the Lemberger sites will not work and that the Waste Management Landfill operating near the site should be closed.

Response: U.S. EPA believes, based on previous experiences with similar sites, that the selected remedial actions for the sites are adequate. The capping of the two landfills will reduce the infiltration of water through the waste and the potential for direct contact. The installation of a slurry wall around the waste in the Lemberger Landfill will prevent the horizontal movement of groundwater through the wastes which have been shown to be submerged in the shallow groundwater system. The groundwater pump and treat system will address the dangers posed by the groundwater contamination. The soil vapor extraction system will reduce the amount of volatile organic contamination in the LTR soils.

The Waste Management landfill is an operating landfill that is regulated by the WDNR. WDNR is responsible for assuring that the landfill is operating in accordance with the State regulations. U.S. EPA does not have authority to close this landfill.

4. Comment: One commenter said he is disappointed with the final proposal. "It appears to be a Band-Aid type of solution. I fear that simply capping the residues over will only put off the complete cleanup for 20-30 years. Let's clean the site properly the first time! At the very least, dig up the most highly contaminated soil residues around the trenches, and either package it and ship it off for disposal, or clean it up, preferably by burning. Who will pay for the cleanup?"

Response: The purpose of the landfill cap is to prevent direct contact with the landfill waste and reduce water infiltration. Additionally, a soil vapor extraction system will be installed to treat the most contaminated soils. Excavating the waste from the landfill and shipping it off-site to be incinerated is not a feasible and cost effective option. Excavation of most of the contaminated waste will pose risk of high exposure to contaminants in the short term for site workers. The cleanup for both operable units at the Lemberger Sites will be paid by 11 Potentially Responsible Parties that have entered into a Consent Decree for the implementation of the cleanup plan for the first operable unit and into an Administrative Order on Consent for the cleanup activities at the second operable unit.

5. Comment: The same commenter agreed with WDNR that if the site is to be capped, it should include a plastic geomembrane, and questioned the effectiveness of the soil vapor extraction system in soils with a lot of clay.

Response: A composite cap with a plastic geomembrane is not appropriate because construction of the soil vapor extraction system would impair the integrity of the composite cap. An NR 504.07 cap will provide an adequate level of protection when combined with treatment and can easily be repaired after installation of the soil vapor extraction system. U.S. EPA has initiated cleanups at sites with similar soil conditions to the LTR site using soil vapor extraction and it has been demonstrated that the system can work adequately. Additionally, the areas to be treated at LTR, coincide for the most part with the areas where drums were excavated. The soil in these excavated areas is not as tight as the soil in undisturbed areas. This situation provides for improved transmissivity of the injected air, thus, improving the effectiveness of contaminant removal at the site.

6. Comment: One commenter noted that at an early-on meeting, a plan for containing the contamination in one area called for the construction of a slurry wall and had the following questions: Is the wall deep enough? What's to prevent contaminants from entering groundwater below the walls? Is the water removal a one time shot, or will it be repeated ad infinitum? No plans were made to dispose of the contaminated water. Was it to be purified in an official treatment plant, or casually filtered on site? What was to be done with the partially treated water? Was it to be drained into the Branch River watershed? What was planned to keep it from entering a groundwater aquifer?

Response: This comment refers to the cleanup being implemented as part of the first operable unit (OU1) for the site. A Record of Decision was signed in September 1991 for OU1. The slurry wall will be constructed around the perimeter of the waste in the Lemberger Landfill. This wall will be keyed into a clay unit that separates the upper aquifer from the lower aquifer. This clay unit will serve as a protective barrier to prevent migration of groundwater under the wall. Additionally extraction wells will be placed inside the area enclosed by the wall to extract the leachate generated. These wells will serve as hydraulic controls to prevent the migration of the groundwater in contact with the waste away from the area enclosed by the wall. U.S. EPA assumes the "water" the commenter is referring to is the leachate contained within the wall. Once this leachate is pumped it will be trucked and shipped to a Publicly Owned Treatment Works (POTW) for its final disposal and treatment. It will not be drained to the Branch River watershed nor will it be disposed of so it enters the groundwater.

7. Comment: The same commenter asked whether the extraction of contaminated water from a series of wells for the groundwater pump and treat system was to be done periodically once or periodically over ten, twenty, or fifty years. Treating the water "on site" is highly inadequate. It needs to go through an established treatment plant.

Response: Again this comment relates to cleanup plan for OU1. The groundwater pump and treat system will be designed and constructed to operate continuously. It has been estimated that the cleanup of the groundwater will take approximately fifteen years. During the Feasibility Study (FS) for OU1 various ways of dealing with the remediation of the groundwater were evaluated. The FS determined that treatment on site was the most preferable.

8. Comment: The same commenter asked, "What are the residents of the area to do while the cleansing process takes place? Residents would live every day with the ever-present question, 'Is our drinking water contaminated?'"

Response: The PRPs are required to monitor the residential wells during the duration of the remediation project. If any wells are impacted by the site contamination during this timeframe, measures will be taken by U.S. EPA to replace the drinking water wells or provide a safe drinking water supply.

9. Comment: The same commenter said in the diagram, air was forced down a pipe at the LTR site and was supposed to move through the contaminated soil and find its way to an "exit pipe." "I can just hear the gasping air shouting, 'Where is that exit pipe?'" What if the air found some other exit in a rock layer or underground channel? Would it erupt at some unexpected, undesirable point? Could it be anywhere?

Response: The diagram presented in the fact sheet for the LTR site was used for illustration purposes only. U.S. EPA does not intend to install only one air injection well and one vapor extraction well. The number of air injection and vapor extraction wells will be determined during predesign activities for the site. Since the site will be capped in conjunction with the soil vapor extraction system, there will be an extremely minimal chance of the injected air or vapor gas escaping, except through the extraction wells. Air will be injected, after which vacuum is applied, forcing the injected air up the extraction wells.

10. Comment: A commenter expressed that their water treatment technology using the "Advanced Oxidation Process" (the NOBIS system) may eliminate the proposed plans' need for transportation of vast quantities of contaminated wastewater to a POTW. The commenter proposed that NOBIS technologies be tested for the Lemberger sites.

Response: This comment refers to the cleanup plan for OU1. An FS was prepared evaluating treatment technologies to address the contamination at the Lemberger sites. The 1991 ROD selected groundwater pump and treat. The ROD specified that either carbon adsorption or air stripping could be used as the treatment technologies. A pump test and treatability study has been performed and a conventional air stripping process was determined to be an adequate way of treating the groundwater. At this time the design is 95% complete.

**ACRONYM GUIDE for the Administrative Record
LEMBERGER LANDFILL INC. AND
LEMBERGER TRANSPORT & RECYCLING INC. SITE
MANITOWOC COUNTY, WISCONSIN**

ACRONYM	DEFINITION
AR	Administrative Record
ARAR	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
NPL	National Priority List
OSWER	Office of Solid Waste and Emergency Response
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
U.S.EPA	United States Environmental Protection Agency
WDNR	Wisconsin Department of Natural Resources

ADMINISTRATIVE RECORD INDEX
LEMBERGER LANDFILL INC. AND
LEHBERGER TRANSPORT & RECYCLING INC. SITE
MANITOWOC COUNTY, WISCONSIN

FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCM
16	91/03/04	Letter re: Hazardous Air Contaminant Control Guidance	G. Edelstein-WDNR	M. Gustafson-USEPA	Correspondence	1	
65	90/08/14	Alternatives Array Document	B&V Waste Science and Technology Corp.		Reports/Studies	2	
400	91/01/18	Final Remedial Investigation Report Volume I - Report	B&V Waste Science and Technology Corp. and USEPA	Lemberger Landfill Inc.	Reports/Studies	3	
484	91/01/18	Final Remedial Investigation Report Volume II - Appendices	B&V Waste Science and Technology Corp. and USEPA	Lemberger Landfill Inc.	Reports/Studies	4	
15	91/03/01	Lemberger Landfill Site Volume Calculations of Waste with cover letter attached	C. Whitlock-B&V Waste Science and Technology Corp.	M. Gustafason-USEPA	Reports/Studies	5	

GUIDANCE DOCUMENTS INDEX LEMBERGER LANDFILL AND LEMBERGER TRANSPORT & RECYCLING SITE

Guidance Documents are available for review at USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Soil Survey of Calumet and Manitowoc Counties, Wisconsin	USDA, Soil Conservation Service	80/02/00
User's Guide to the Contract Laboratory Program	USEPA	86/12/00
CERCLA Compliance with Other Laws Manual: Part I	USEPA, OSWER Directive 9234.1-01	88/08/08
Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final	USEPA, OSWER Directive 9355.3-01	88/10/00
Quality Assurance Project Plan, Phase I Remedial Investigation, Lemberger Landfill, Inc. and Lemberger Transport and Recycling, Inc. Manitowoc County, WI	USEPA and B&V	88/11/30
Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites EPA/540/G-88/003	USEPA, OSWER Directive 9283.1-2	88/12/00
CERCLA Compliance with Other Laws Manual: Part II Clean Air Act and Other Environmental Statues and State Requirements EPA/540/G-89/009	USEPA, OSWER Directive 9234.1-02	89/08/00

GUIDANCE DOCUMENTS INDEX
LEMBERGER LANDFILL AND LEMBERGER TRANSPORT & RECYCLING SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual	USEPA	89/12/00
Final Remedial Investigation Report and Lemberger Landfill Inc. and Lemberger Transport and Recycling Inc.	USEPA, B&V Waste Science & Tech Corp	91/01/18

ADMINISTRATIVE RECORD INDEX - REMEDIAL ACTION
LEMBERGER LANDFILL INC. AND
LEMBERGER TRANSPORT & LEMBERGER RECYCLING INC. SITE - UPDATE NO. 1
MANITOWOC COUNTY, WISCONSIN

FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
	426	91/05/10	Final Public Comment Phased Feasibility Study Report for Lemberger Landfill Inc. and Lemberger Transport and Recycling Inc. Volume I: Report	USEPA	Lemberger Inc.	Report/Studies	1
	726	91/05/10	Final Public Comment Phased Feasibility Study Report for Lemberger Landfill Inc. and Lemberger Transport and Recycling Inc. Volume II: Appendices	USEPA	Lemberger Inc.	Report/Studies	2

U.S. EPA ADMINISTRATIVE RECORD
LEMBERGER TRANSPORT AND RECYCLING SITE
MANITOWOC COUNTY, WISCONSIN
UPDATE #3
09/21/94

DOC#	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	04/00/91	OSWER/U.S. EPA	U.S. EPA	Quick Reference Fact Sheet: Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs (Publication 9355.3-02FS-3)	5
2	09/23/91	Adamkus, V., U.S. EPA	U.S. EPA	Record of Decision	79
3	10/00/92	B & V Waste Science and Technology Corporation	U.S. EPA	Remedial Investigation Technical Memorandum for the Site Source Control Operable Unit	180
4	05/25/93	Valentin, P., U.S. EPA	Reiner, E., US. EPA	Memorandum re: Closure Requirements	2
5	07/15/93	U.S. EPA	Respondents	Administrative Order By Consent	26
6	08/13/93	Malcolm Pirnie, Inc.	U.S. EPA	Phase I Work Plan for Operable Unit #2	79
7	10/00/93	Malcolm Pirnie, Inc.	U.S. EPA	Geophysical Survey Results	29
8	11/02/93	Malcolm Pirnie, Inc.	U.S. EPA	Phase 2 Drum Excavation and Removal Work Plan (Final)	231
9	09/02/94	Edelstein, G., WDNR	Valentin, P., U.S. EPA	Letter re: Draft ROD for Operable Unit #2 w/Attachments	30